

1 **What Is Claimed Is**

- 2 1. A chuck device for a tool bit with an annual groove, the chuck
3 device including:
- 4 ● a socket defining a chamber for receiving the tool bit and at
5 least one aperture communicated with the chamber;
 - 6 ● a spindle extending from the socket;
 - 7 ● at least one ball received in the at least one aperture for entering
8 the annular groove of the tool bit;
 - 9 ● a sleeve including a chamber in which the socket is movably
10 inserted and an annular groove communicated with the chamber
11 for receiving the at least one ball;
 - 12 ● a first elastic element compressed between the socket and the
13 sleeve; and
 - 14 ● a second elastic element put in the chamber of the socket for
15 pushing the tool bit.
- 16 2. The chuck device according to claim 1 including a ring attached to
17 the socket, wherein the first elastic element is compressed between
18 the ring and the sleeve.
- 19 3. The chuck device according to claim 2 wherein the sleeve includes
20 an annular rib formed on an internal face, wherein the elastic
21 element is compressed between the ring and the annular rib.
- 22 4. The chuck device according to claim 2 including a ring fit in the
23 sleeve for abutting the ring attached to the socket so as to retain the
24 sleeve on the socket.
- 25 5. The chuck device according to claim 1 wherein the socket includes

- 1 two apertures each defined in one of the facets of the chamber, and a
2 ball is received in each of the apertures.
- 3 6. The chuck device according to claim 1 wherein the first ring is a
4 C-ring received in an annular groove defined in an external surface
5 of the socket.
- 6 7. The chuck device according to claim 1 wherein the second elastic
7 element includes a first section and a second section for contact with
8 the tool bit.
- 9 8. The chuck device according to claim 7 wherein the first section of
10 the second elastic element is denser than the second section of the
11 second elastic element.
- 12 9. A chuck device for a tool bit with an annular groove, the chuck
13 device including:
- 14 ● a socket defining a chamber for receiving the tool bit, an
15 annular groove in an external face and at least one aperture
16 through which the chamber is communicated with the annular
17 groove;
 - 18 ● a spindle extending from the socket;
 - 19 ● a C-ring received in the annular groove of the socket for
20 entering the annular groove of the tool bit through the at least
21 one aperture;
 - 22 ● a sleeve including a chamber in which the socket is movably
23 inserted and an annular groove communicated with the chamber
24 for receiving the C-ring;
 - 25 a first elastic element compressed between the socket and the

1 sleeve; and
2 a second elastic element put in the chamber of the socket for
3 pushing the tool bit.
4 10. The chuck device according to claim 9 including a ring attached to
5 the socket, wherein the first elastic element is compressed between
6 the ring and the sleeve.
7 11. The chuck device according to claim 10 wherein the sleeve includes
8 an annular rib formed on an internal face, wherein the elastic
9 element is compressed between the ring and the annular rib.
10 12. The chuck device according to claim 10 including a ring fit in the
11 sleeve for abutting the ring attached to the socket so as to retain the
12 sleeve on the socket.
13 13. The chuck device according to claim 9 wherein the socket includes
14 an internal face with six facets and six corners.
15 14. The chuck device according to claim 13 wherein the socket includes
16 six apertures each defined in one of the corners of the internal face
17 of the socket.

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